

REMARKS

CLAIMS:

Claims 1-35 comprise the case.

Amendments to Claims 1, 10, 19, 23, 30, 33, 34, 35

Independent Claims 1, 10, 19, 23, 30, 33, 34, 35 are amended hereby to insure that there is no confusion between the claimed "minimally operational state" and the "fully operational" state. The amendment comprises the language "said minimally operational state absent a code image required to become fully operational, said minimally operational state sufficient to provide a code image request". The amendment is in accordance with the specification, e.g. page 8, line 15 - page 9, line 20; page 11, line 12 - page 12, line 2; page 17, line 21 - page 18, line 5; page 18, line 19 - page 19, line 6.

Applicant respectfully submits that no new matter has been added, and respectfully requests entry of the amendment.

Rejection and Response to Arguments:

The rejections of Claims 1-6, 9-20, 22-27, 30 and 32-35 under 35 U.S.C. 102(e) and Claims 7, 8, 21, 28, 29 and 31 under 35 U.S.C. 103(a) were repeated. (Claims 28 and 29 were included in the initial paragraph of the '102(e) rejection, but were not rejected thereat).

In the response to arguments, the Examiner stated that the Declaration "under 37 CFR 1.132 filed 06/07/2004 is insufficient to overcome the rejection of claim 1-35 based upon fails to set

forth facts showing is not commensurate in scope with the claims
***".

Applicant understands the comment to mean that the Examiner believed the claims to draw insufficient distinction between the "minimally operational state" and the "fully operational" state.

With the above amendments, Applicant respectfully submits that the Declaration under 37 CFR 1.132 filed 06/07/2004 is sufficient to overcome the rejections of Claims 1-35.

Applicant therefore respectfully requests reconsideration of the rejections in view of the above amendments and the Declaration under 37 CFR 1.132 filed 06/07/2004; to enter the above amendments; and to allow Claims 1-35.

Comment:

In the discussion of the Declaration, the Examiner also stated 1) "Expert's declarant's ***"; and 2) "declarant's opinion on the ultimate legal issues is not evidence in the case. It is merely an opinion ***".

With respect to 1), Declarant is not an "expert", but rather one of skill in the art. Please see his statement of education and experience. With respect to 2), Declarant stated the facts of the showings of the present Application and of Barrett as he saw them.

Response to Rejections:

The previous rejections have been repeated by the Examiner, and are addressed hereby, taking into account the amendments to the independent claims which insure that there is no confusion between the claimed "minimally operational state" and the "fully operational" state.

I) 35 U.S.C. 102(e):

The Examiner rejected Claims 1-6, 9-20, 22-30 and 32-35 under 35 U.S.C. 102(e) as being anticipated by Barrett et al. (Barrett), US Patent 6,023,727.

A) Claims 1, 10, 19, 30, and 33-35:

As to independent Claims 1, 10, 19, 30, and 33-35, the Examiner states that Barrett shows "A multi-node network of processors ***

-processors having a minimally operational state (col. 16, lines 4-5 'NEB ... shipped with operational software'). It is inherent for processor to be in minimally operational state in order to update or upgrade or download program or code image.

-a fully operational state employing a code image, said processors (col. 17, lines 2-5 'new program image is received over the network, microprocessor ... downloads ... new image'). It is inherent that device is in the mode for download image.

-when in said minimally operational state, requesting said code image from said network (col. 16, lines 8-9 'network administrator's PC 103, the network administrator can remotely alter the ROM firmware image in flash EPROM 174 by downloading new data' and col. 8, lines 45-46 "The program respond to requests ... for data download');

- and a master source *** having at least said code image for broadcasting said code image on said network (col. 16, lines 7-9 'network administrator's PC (master source code)... remotely alter the ROM firmware image in flash EPROM'),

- upon receiving said code image request waiting a predetermined time period allowing any additional said processor to reach said minimally operational state (col. 10, lines 57-60 'NEB processor 173 stops writing to memory (and accordingly stops reading and

updating the pointers) at predetermined intervals, allowing printer interface microprocessor 151 sole access to the memory until it catches up'),

- broadcasting said code image to said network (col. 16, line 36 'proper image is sent to the targeted NEB')."

The Examiner has seemingly considered a minimally operational state as essentially the same as a fully operational state. The amendment to independent Claims 1, 10, 19, 30, 33, 34, 35 is submitted to insure that there is no confusion between the claimed "minimally operational state" and the "fully operational" state. The amendment comprises the language "said minimally operational state absent a code image required to become fully operational, said minimally operational state sufficient to provide a code image request".

Thus, as pointed out by the previously submitted Declaration under Rule 1.132, Barrett describes a "reprogrammable network communication device" which does not have a minimally operational state, and so has only a fully operational state, described as 'NEB 101 is shipped with operational software' ***. See also, column 7, lines 56-61, where the software is executed by a microprocessor out of 'flash EPROM 174' or can be 'selectively moved to the higher performance 512 KB DRAM 175'.

"That, the Barrett reprogrammable network communication device does not request the code image from the network. Instead, the code image already exists in 'flash EPROM 174' ***.

"That, the code image supplied by Barrett is conducted by the network administrator at (his) own initiative, and not at the request of a processor in the network. Specifically, 'from the network administrator's PC 103, the network administrator can remotely alter the ROM firmware image in flash EPROM 174 by downloading new data' ***.

"The Barrett administrator insures that compatible images are downloaded by scanning the network to identify targets, and has 'software code which ensures that the downloaded image is compatible before actual reprogramming occurs' ***.

"Barrett does not wait a predetermined time period, the predetermined time period allowing any additional processor to reach the minimally operational state, and does not, upon completion of the predetermined time period, show a master source broadcasting the code image on the network, as is done by the present '917 Application."

Additionally, Applicant points out that the Examiner has referred to the microprocessor 173 of NEB 101 as waiting at predetermined intervals for a catch up, as though the NEB is a master processor waiting for a predetermined time period as per Applicant's claims, but the NEB is, instead, a target, and is controlling the timing for writing to its own memory.

Hence, Applicant respectfully submits that Claims 1, 10, 19, 30, and 33-35 patentably recite, e.g. Claim 1, "A multi-node network of processors, comprising:

"a network;

"a plurality of processors coupled in said network, said processors having a minimally operational state, said minimally operational state absent a code image required to become fully operational, said minimally operational state sufficient to provide a code image request; and having a fully operational state employing a code image; said processors, when in said minimally operational state, requesting said code image from said network; and

"a master source coupled in said network, said master source having at least said code image for broadcasting said code image on said network, said master source, upon receiving said code image request, waiting a predetermined time period, said predetermined time period allowing any additional said processor

to reach said minimally operational state, and, upon completion of said predetermined time period, broadcasting said code image on said network." (Emphasis added).

Applicant respectfully submits that Claims 1, 10, 19, 30, and 33-35 therefore patentably define over Barrett, and respectfully requests the allowance of Claims 1, 10, 19, 30, and 33-35.

B) Claims 2, 11 and 20:

The Examiner rejected Claims 2, 11 and 20 as above, and additionally states "Barrett discloses:

- receive and implement said code image (col. 16, lines 31-32 'The flash EPROM on board then reprograms itself with the new image')"

As discussed by the previously submitted Declaration under Rule 1.132, Barrett describes a "reprogrammable network communication device" which does not have a minimally operational state, and so has only a fully operational state, described as 'NEB 101 is shipped with operational software' ***. See also, column 7, lines 56-61, where the software is executed by a microprocessor out of 'flash EPROM 174' or can be 'selectively moved to the higher performance 512 KB DRAM 175'.

"That, the Barrett reprogrammable network communication device does not request the code image from the network. Instead, the code image already exists in 'flash EPROM 174' ***."

Hence, Applicant respectfully submits that Barrett does not move from a minimally operational state to, e.g. Claim 2, "wherein said processors, additionally, upon said broadcast of said code image, receive and implement said code image only if said processor is in said minimally operational state."

Applicant respectfully submits that Claims 2, 11 and 20 therefore patentably define over Barrett, and respectfully requests the allowance of Claims 2, 11 and 20.

C) Claims 3, 4, 12 and 13:

The Examiner rejected Claims 3, 4, 12 and 13 as above, and additionally states "Barrett discloses:
- a non-volatile memory for storing said minimally operational state code (** 'non-volatile random access memory (NVRAM)... used for initialization data storage during power cycling of printer 102 which houses NEB 101')".

However, as discussed by the previously submitted Declaration under Rule 1.132, Barrett describes a "reprogrammable network communication device" which does not have a minimally operational state, and so has only a fully operational state, described as 'NEB 101 is shipped with operational software' **. See also, column 7, lines 56-61, where the software is executed by a microprocessor out of 'flash EPROM 174' or can be 'selectively moved to the higher performance 512 KB DRAM 175'.

Applicant points out that, per Barrett, "Network and printer configuration parameters are written into NVRAM 180 when the printer is first installed into the network to allow NEB software to recover the installation parameters after printer power has been cycled off and on." (column 7, lines 28-32).

Thus, Barrett does not describe, e.g. Claim 3, "wherein said processors additionally each comprises a non-volatile memory for storing said minimally operational state code", nor, e.g. Claim 4, "wherein said minimally operational state code comprises a boot program which becomes operational upon reboot of said processor."

Applicant respectfully submits that Claims 3, 4, 12 and 13 therefore patentably define over Barrett, and respectfully requests the allowance of Claims 3, 4, 12 and 13.

D) Claims 5 and 14:

The Examiner rejected Claims 5 and 14 as above, and additionally states "Barrett discloses:

- minimally operational state is additionally sufficient to conduct at least a basic system test and provide said code image request (col. 8, lines 61-64 'POST is a power-on self-test module that checks the integrity of NEB hardware and software at power-up')"

However, as discussed above, Barrett has no "minimally operational state", and instead only has a fully operational state. "POST" is one of the "blocks of code, or modules, that are stored in flash EPROM 174." (column 7, lines 64-65).

As discussed by the previously submitted Declaration under Rule 1.132, Barrett describes a "reprogrammable network communication device" which does not have a minimally operational state, and so has only a fully operational state, described as 'NEB 101 is shipped with operational software' ***. See also, column 7, lines 56-61, where the software is executed by a microprocessor out of 'flash EPROM 174' or can be 'selectively moved to the higher performance 512 KB DRAM 175'.

"That, the Barrett reprogrammable network communication device does not request the code image from the network. Instead, the code image already exists in 'flash EPROM 174' ***."

Thus, Barrett does not describe, e.g. Claim 5, "wherein said code for said minimally operational state is additionally sufficient to conduct at least a basic system test and provide said code image request."

Applicant respectfully submits that Claims 5 and 14 therefore patentably define over Barrett, and respectfully requests the allowance of Claims 5 and 14.

E) Claims 6 and 15:

The Examiner rejected Claims 6 and 15 as above, and additionally states "Barrett discloses:

- a RAM for, upon receiving said code image, storing said code image (col. 2, lines 2-3 'A random access memory stores a new program image for the reprogrammable read only memory')

However, the image stored is a new program image. Applicant respectfully submits that this is fundamentally different from Applicant's, e.g. Claim 1, "a plurality of processors coupled in said network, said processors having a minimally operational state, said minimally operational state absent a code image required to become fully operational, said minimally operational state sufficient to provide a code image request; and having a fully operational state employing a code image". (emphasis added).

As discussed by the previously submitted Declaration under Rule 1.132, Barrett describes a "reprogrammable network communication device" which does not have a minimally operational state, and so has only a fully operational state, described as 'NEB 101 is shipped with operational software' ***. See also, column 7, lines 56-61, where the software is executed by a microprocessor out of 'flash EPROM 174' or can be 'selectively moved to the higher performance 512 KB DRAM 175'.

"That, the Barrett reprogrammable network communication device does not request the code image from the network. Instead, the code image already exists in 'flash EPROM 174' ***."

Thus, Barrett does not describe, e.g. Claim 6, "wherein said processors additionally comprise a RAM for, upon receiving said code image, storing said code image."

Applicant respectfully submits that Claims 6 and 15 therefore patentably define over Barrett, and respectfully requests the allowance of Claims 6 and 15.

F) Claims 9, 18, 22 and 32:

The Examiner rejected Claims 9, 18, 22 and 32 as above, and additionally states "Barrett discloses:

- image is correct for said processor and select said broadcast image for implementation if said determination determines that said code image is correct for said processor (col. 17, lines 3-4 'microprocessor...downloads the new image into DRAM...confirms that the new program image is compatible...configuration information *** compatibility is confirmed')

However, the program image of Barrett is instead a "new program image" (column 17, line 3) (emphasis added). Thus, the discussion with respect to Claims 6 and 15 applies also to Applicant's Claims 9, 18, 22 and 32.

Applicant therefore respectfully submits that Barrett does not describe, e.g. Claim 9, "wherein said master source comprises a plurality of different said code images, wherein said processor requesting said code image requests one of said different code images, wherein said master source broadcasts said requested one of said different code images, and wherein said processors additionally determine whether said broadcast code image is correct for said processor, and select said broadcast code image for implementation if said determination determines that said code image is correct for said processor."

Applicant respectfully submits that Claims 9, 18, 22 and 32 therefore patentably define over Barrett, and respectfully requests the allowance of Claims 9, 18, 22 and 32.

G) Claim 23:

The Examiner rejected independent Claim 23 stating that Barrett shows "For a multi-node network of processors ***

- a network having a master source ***
- said master source having at least said code image for broadcasting said code image on said network (col. 16, lines 7-9 'network administrator's PC (master source code)... remotely alter the ROM firmware image in flash EPROM'),
- said master source, upon receiving said code image request waiting a predetermined time period, said predetermined time period allowing any additional processor to reach said minimally operational state (col. 10, lines 57-60 'NEB processor 173 stops writing to memory (and accordingly stops reading and updating the pointers) at predetermined intervals, allowing printer interface microprocessor 151 sole access to the memory until it catches up'),
- and, upon completion of said predetermined time period, broadcasting said code image to said network (*** 'proper image is sent to the targeted NEB')
- a non-volatile memory for Storing code providing a minimally operational state of said processor (*** 'non-volatile random access memory (NVRAM)... used for initialization data storage during power cycling of printer 102 which houses NEB 101')".
- a processor memory storing a code image providing a fully operational state of said processor (*** 'A random access memory stores a new program image for the reprogrammable read only memory')

- and a processing unit coupled to said non-volatile memory (NEB control logic...interfaces with non-volatile random access memory')
- said processor memory and said processor interface, when in said minimally operational state provided by said non-volatile memory, requesting said code image from said network (col. 16, lines 7-9 'network administrator's PC *** can remotely alter the ROM firmware image in flash EPROM 174 by downloading new data' and col. 8, lines 45-46 'The program respond to requests...for data download'), via said processor interface ***."

As above, the amendment to independent Claim 23 is submitted to insure that there is no confusion between the claimed "minimally operational state" and the "fully operational" state.

As pointed out by the previously submitted Declaration under Rule 1.132, Barrett describes a "reprogrammable network communication device" which does not have a minimally operational state, and so has only a fully operational state, described as 'NEB 101 is shipped with operational software' ***. See also, column 7, lines 56-61, where the software is executed by a microprocessor out of 'flash EPROM 174' or can be 'selectively moved to the higher performance 512 KB DRAM 175'.

"That, the Barrett reprogrammable network communication device does not request the code image from the network. Instead, the code image already exists in 'flash EPROM 174' ***.

"That, the code image supplied by Barrett is conducted by the network administrator at (his) own initiative, and not at the request of a processor in the network. Specifically, 'from the network administrator's PC 103, the network administrator can remotely alter the ROM firmware image in flash EPROM 174 by downloading new data' ***.

Hence, Applicant respectfully submits that Claim 23 patentably recites, "a processor interface coupling said processor in said network;

"a non-volatile memory for storing code providing a minimally operational state of said processor, said minimally operational state absent a code image required to become fully operational, said minimally operational state sufficient to provide a code image request;

"a processor memory capable of storing a code image providing a fully operational state of said processor; and

"a processing unit coupled to said non-volatile memory, said processor memory and said processor interface, when in said minimally operational state provided by said non-volatile memory, requesting said code image from said network, via said processor interface." (Emphasis added).

Applicant respectfully submits that Claim 23 therefore patentably defines over Barrett, and respectfully requests the allowance of Claim 23.

H) Claim 24:

The Examiner rejected Claim 24 as above, and additionally states "Barrett discloses:

- receive and implement said code image (col. 16, lines 31-32 'The flash EPROM on board then reprograms itself with the new image')"

As discussed by the previously submitted Declaration under Rule 1.132, Barrett describes a "reprogrammable network communication device" which does not have a minimally operational state, and so has only a fully operational state, described as 'NEB 101 is shipped with operational software' ***. See also,

column 7, lines 56-61, where the software is executed by a microprocessor out of 'flash EPROM 174' or can be 'selectively moved to the higher performance 512 KB DRAM 175'.

"That, the Barrett reprogrammable network communication device does not request the code image from the network. Instead, the code image already exists in 'flash EPROM 174' ***."

Hence, Applicant respectfully submits that Barrett does not move from a minimally operational state to, in Claim 24, "wherein said processing unit, additionally, upon said broadcast of said code image by said master source, receives and stores said code image in said processor memory, and implements said code image, only if said processing unit is in said minimally operational state."

Applicant respectfully submits that Claim 24 therefore patentably defines over Barrett, and respectfully requests the allowance of Claim 24.

I) Claim 25:

The Examiner rejected Claim 25 as above, and additionally states "Barrett discloses:

- a non-volatile memory for storing said minimally operational state code (*** 'non-volatile random access memory (NVRAM)... used for initialization data storage during power cycling of printer 102 which houses NEB 101')".

However, as discussed by the previously submitted Declaration under Rule 1.132, Barrett describes a "reprogrammable network communication device" which does not have a minimally operational state, and so has only a fully operational state, described as 'NEB 101 is shipped with operational software' ***. See also, column 7, lines 56-61, where the software is executed

by a microprocessor out of 'flash EPROM 174' or can be 'selectively moved to the higher performance 512 KB DRAM 175'.

Applicant points out that, per Barrett, "Network and printer configuration parameters are written into NVRAM 180 when the printer is first installed into the network to allow NEB software to recover the installation parameters after printer power has been cycled off and on." (column 7, lines 28-32).

Thus, Barrett does not describe, in Claim 25, "wherein said minimally operational state code stored in said non-volatile memory comprises a boot program which is provided to said processing unit and becomes operational upon reboot of said processor."

Applicant respectfully submits that Claim 25 therefore patentably define over Barrett, and respectfully requests the allowance of Claim 25.

J) Claim 26:

The Examiner rejected Claim 26 as above, and additionally states "Barrett discloses:

- minimally operational state is additionally sufficient to conduct at least a basic system test and provide said code image request (col. 8, lines 61-64 'POST is a power-on self-test module that checks the integrity of NEB hardware and software at power-up')"

However, as discussed above, Barrett has no "minimally operational state", and instead only has a fully operational state. "POST" is one of the "blocks of code, or modules, that are stored in flash EPROM 174." (column 7, lines 64-65).

As discussed by the previously submitted Declaration under Rule 1.132, Barrett describes a "reprogrammable network communication device" which does not have a minimally operational state, and so has only a fully operational state, described as

'NEB 101 is shipped with operational software' ***. See also, column 7, lines 56-61, where the software is executed by a microprocessor out of 'flash EPROM 174' or can be 'selectively moved to the higher performance 512 KB DRAM 175'.

"That, the Barrett reprogrammable network communication device does not request the code image from the network. Instead, the code image already exists in 'flash EPROM 174' ***."

Thus, Barrett does not describe, in Claim 26, "wherein said boot program stored in said non-volatile memory storing for said minimally operational state is additionally sufficient to conduct at least a basic system test and provide said code image request."

Applicant respectfully submits that Claim 26 therefore patentably defines over Barrett, and respectfully requests the allowance of Claim 26.

K) Claim 27:

The Examiner rejected Claim 27 as above, and additionally states "Barrett discloses:

- a RAM for, upon receiving said code image, storing said code image (col. 2, lines 2-3 'A random access memory stores a new program image for the reprogrammable read only memory')"

However, the image stored is a new program image. Applicant respectfully submits that this is fundamentally different from Applicant's, e.g. Claim 23, "a non-volatile memory for storing code providing a minimally operational state of said processor, said minimally operational state absent a code image required to become fully operational, said minimally operational state sufficient to provide a code image request;

a processor memory capable of storing a code image providing a fully operational state of said processor". (emphasis added).

As discussed by the previously submitted Declaration under Rule 1.132, Barrett describes a "reprogrammable network communication device" which does not have a minimally operational state, and so has only a fully operational state, described as 'NEB 101 is shipped with operational software' ***. See also, column 7, lines 56-61, where the software is executed by a microprocessor out of 'flash EPROM 174' or can be 'selectively moved to the higher performance 512 KB DRAM 175'.

"That, the Barrett reprogrammable network communication device does not request the code image from the network. Instead, the code image already exists in 'flash EPROM 174' ***."

Thus, Barrett does not describe, in Claim 27, "wherein said processor memory comprises a RAM for storing said code image."

Applicant respectfully submits that Claim 27 therefore patentably defines over Barrett, and respectfully requests the allowance of Claim 27.

II) 35 U.S.C. 103(a):

The Examiner rejected Claims 7, 8, 16, 17, 21, 28, 29 and 31 under 35 U.S.C. 103(a) as being unpatentable over Barrett, in view of Harmer (Harmer), US Patent 6,401,198.

(Note that Claims 16, 17 are stated on page 5 of the rejection as being rejected for the same reasons as Claim 7 and 8, respectively.)

L) Claims 7, 8, 16, 17, 21, 28, 29 and 31:

The Examiner states that the rejection of Claims 1, 19 and 23 "is incorporated respectively, and further Barrett did not explicitly disclose code image is a combination of different images."

"However Harmer discloses one code image contains multiple code images (col. 10, lines 11-12 'one code image making up the first portion...and second portion... of... BIOS' and col. 10, lines 14-17 'BIOS... include multiple images... each... images corresponding to a different...computer architecture... device... attached')."

"Therefore, it would have been obvious *** to incorporate the method of having one code image with different images included as taught by Harmer into the method of distributing the code image as taught by Barrett."

However, as discussed above, Barrett has no "minimally operational state", and instead only has a fully operational state, and that fully operational state code is stored at the NEB.

As discussed by the previously submitted Declaration under Rule 1.132, Barrett describes a "reprogrammable network communication device" which does not have a minimally operational state, and so has only a fully operational state, described as 'NEB 101 is shipped with operational software' ***. See also, column 7, lines 56-61, where the software is executed by a microprocessor out of 'flash EPROM 174' or can be 'selectively moved to the higher performance 512 KB DRAM 175'.

"That, the Barrett reprogrammable network communication device does not request the code image from the network. Instead, the code image already exists in 'flash EPROM 174' ***."

Harmer also has no minimally operational state, and instead has only a fully operational state stored within the "computer system", which comprises a BIOS, with "at least a portion of the BIOS to be stored within the mass memory storage of a mass memory storage peripheral computer device rather than being stored within ROM." (Abstract, lines 2-10). Harmer thus also does not have a minimally operational state and request the fully operational state code image from the network.

Hence, Applicant respectfully submits that neither Barrett nor Harmer describe, e.g. Claim 7, "wherein said master source provides one said code image for any said code image request", nor, e.g. Claim 8, "wherein ones of said processors implement different said code images, wherein said one master source code image comprises a combination of said different code images, and wherein said processors additionally select and implement one of said combination of different code images."

Applicant respectfully submits that Claims 7, 8, 16, 17, 21, 28, 29 and 31 therefore patentably define over Barrett in view of Harmer, and respectfully requests the allowance of Claims 7, 8, 16, 17, 21, 28, 29 and 31 under 35 U.S.C. 103(a).

Additional Art:

The additional references cited by the Examiner, as best understood, do not teach or suggest Applicant's claimed invention. The Examiner cited US 2003/0146907, Boals et al.; US 2002/0091763, Shah et al.; US 2002/0073304, Marsh et al.; US 2001/0018721, McKenna et al.; and A. Carzaniga et al., "Designing Distributed Applications with Mobile Code Paradigms", ACM, Proceedings of the 19th international conference on Software engineering, pages 22-32. Applicants submit that none of the cited references teach, either singly or in combination, the present invention as described and claimed in Applicants' Claims 1-35.


SUMMARY:

Applicants respectfully request entry of the present amendment.

Applicants have amended the independent Claims 1, 10, 19, 23, 30, 33, 34, 35 are amended hereby to insure that there is no confusion between the claimed "minimally operational state" and the "fully operational" state.

Applicants respectfully submit that the present invention distinguishes over the cited patents and respectfully requests that the Examiner allow Applicants' Claims 1-35 under 35 U.S.C. 102 and 35 U.S.C. 103.

Respectfully submitted,
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